A COMPARATIVE STUDY OF S.R.T.M. UNIVERSITY AND SHIVAJI UNIVERSITY AFFILIATED COLLEGE LIBRARIES ICT IMPACT

Synopsis Submitted to

Swami RamanandTeerthMarathwada University,Nanded

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Researcher
Mahadev Nagnath Chavan
(M.A.Mar/His;M.Ed.SET; M.Lib.&I.Sci.SET)

Research Supervisor
Dr.VikramV.Giri
BhagatsinghMahavidyalaya,Killari
Dist-Latur

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Introduction:

The use of computers has been steadily increasing in science and technology since the 2nd World War. Most of the advanced countries of the world have made much advance in this respect but India has just made a start, especially in industry and business and there also these are witnessing stiff opposition from the employees and their trade because of the fear of retrenchment. However, their application is increasing day by day in science,technology,industry and business. Libraries are no exception to them. As the library authorities and librarians are becoming aware of their potential uses, these are being put to more use. It is hoped that by their use, libraries would increase in the years to come in India, though not at arapid speed, especially because of our socio-economic conditions and the prohibitive of their installation and maintenance.

Information and Communication Technology (ICT) for Libraries

In the past, volume of information was not as large it is today, and the libraries were in theposition to organize the information materials through manual operation. But since the 2ndWorld War, there has been a tremendous output of information, which has been usually Referred to as information explosion. The materials of information in both print and non-print Media (i.e. manuscripts, books, journals, reports, films, discs, tapes) continue to be produced and used in greater and greater quantities. As Xerox Corporation put it in one of their Promotional brochures in 1984, "recorded knowledge has doubled during the last twelve years. It will double again during the next ten." This vast amount of information has to be Processed, stored and retrieved whenever required. The very complexity and magnitude of the problem makes it an impossible task to process by manual method. Library and Information professionals are increasingly being compelled to take the help of semiautomatic and automatic machines for information handling. The revolutionary developments in information technology have two impacts. Firstly, as more and more information is readily available in machine-readable form, there has been a fundamental shift in the concerns of the information profession from "more information" to "accurate, up-to-date and timely information." Secondly, as computers are used increasingly for provision of information, librarians and other information professionals must familiarize themselves with the latest technological development in this field.

History of ICT Applications in Libraries

The American pioneers of library automation were outlasted more than other countries. In1930s, Herman Hollerith of the US Census Bureau invented Punch Card technology with the

help of Dr. Jolul Show Billings. In 1936, Ralph Parker installed Hollerith Punch Card systemat the University of Texas for circulation control of the library and in the mid of 1940s the system was also experimented in the serial record control. In 1950, the Library of Congress introduced a book catalogue using Punch Cards. In 1960s, the first library automation was developed in U.S. In the 1970s, integrated chips and storages devices were also developed and RLIN and WLN was started the online library networks. In 1980s, the use of computers in libraries increased greatly. Many library automation packages came into the market and in the late 1980s; CD-ROMs that contained databases, information and software were also introduced. In 1990s, the development of computer networking was started. The overwhelming explosion of technology with the latest one penetrate the library automation system till date that started using high technology services and security system in the library to facilitate information protection, sources and services.

ICT Application in Libraries

Information Technology means a variety of technological applications in the process ofcommunication of information. The term "information technology" has been used as collective term for the whole spectrum of technologies providing the ways and means as to acquire, store, transmit, retrieve and process information. According to the Webster's New Encyclopedia, information technology is the collective term for the various technologies involved in the processing and transmission of information. Thus information technology includes computer technology, communication technology, multimedia technology, optical technology, networking and barcode technology, etc.

a)Computer Technology: Computer can store every variety of information recorded by people, recall it whenever need arises and can calculate millions of times faster than the human brain. Thus, computer can do precisely all those jobs in the library for which we use many devices with a set detailed instructions.

b) Communication Technology: It is used in communicating the information from generator to the user of the information. Some communication tools like telephone, fax, television, e-mail, and Internet are very much popular for communicating with the person.

c) Multimedia Technology: Multimedia technology is most commonly applied to the simultaneous use of sound, text, image and video in preparing presentations and used in bigger libraries where the special kinds of students have to access and used for it.

d) Optical Technology: Compact discs are one of the most important and useful electronic media of storing the information. A CD-ROM can store a huge amount of records of library like Ramayana and Mahabharata.

e) Networking Technology: Merging of computer and communication technologies has

emerged as a networking. In India NICNET, INDONET, PUNNET, CALIBNET, DELNET, INFLIBNET are some of the important networks.

f) Barcode Technology: Barcode technology can be defined as a self-contained

Major Library Components covered under ICT Application

a) Library Automation

Library automation is the application of machines to carry out the library operation or activity. Library automation is important to provide more and very high speed information accession, to minimize staff requirements, it facilitates handling of huge data or information and it increases library use. The basic requirements for automating library are the selection of computers with right hardware and software, computer skilled professional, conversion and standardization of data, resources and services. In the fully automated library, there are two types of operation works: library house-keeping operations, and library information handling operations which are performed with the help of computers. Library automation encompasses the house keeping operations which are performed by computers. The house-keeping operation brings acquisition, cataloguing, circulation and serial control.

b) Digital Library

The first use of the term digital library, in print, may have been in a 1988 report to the Corporation for National Research Initiatives. These draw heavily on "As We May Think" by Vannevar Bush in 1945, which set out a vision not in terms of technology, but user experience. The term "virtual library" was initially used inter-changeably with digital library. A distinction is often made between content that was created in a digital format, known as born digital, and information that has been converted from a physical medium, e.g. paper, by digitizing. The term "digital library" was first popularized by the National Science Foundation's (NSF) Digital Libraries Initiative in 1994 with the funds of $24.4 million from the US federal. This funding came through a joint initiative of the National Science Foundation (NSF), the Department of Defense Advanced Research Projects Agency (DARPA), and the National Aeronautics and Space Administration (NASA). That US federal funds would be distributed for "digital library" research among six universities which were Carnegie Mellon University, the University of California at Berkeley, the University of Michigan, the University of Illinois, the University of California at Santa Barbara, and Stanford University. A digital library is a type of information retrieval system. It is a combined use of digital computing, storage, and communications machinery together with the contents like multimedia database, information mining, information warehouse, information retrieval, on-line information repositories, electronic library, imaging database, World Wide Web (WWW), and Wide Area Information Services (WAIS).message

with information encoded in a series of black bars of varying breadths and white spaces between every two of them. These are helpful in terms of circulation work and stack verification work of library documents.

c) Internet & Library Services

Internet has become an important tool to transfer information and offers a variety of services to create, browse, access, search, communicate and views information. Internet also plays an important role to enhance library services in providing better information service. The information services based on Internet are: e-journal, e-book, library catalogue, technical reports, online databases, Web OPAC, e-mail based information services, online reference services, content page of journal, online bibliographic databases, etc. All these services provide useful information that can be accessed through online tools available over Internet.

d) Resource Sharing

Areas of Resource Sharing: The network should be able to access some areas over the Internet like online catalogue, indexes, cooperative procurement, co-operative technical operation, preparation of union catalogue, co-operative storage, browsing privilege of cooperative members, co-operative in documentation, exchange of experts, co-operative interlibrary loans, document delivery services, consortia purchasing, and collection development etc.

Objectives of Resource Sharing & Networking: The main objectives of library resource sharing and networking are:

• By exchanging library resources and information for the user that will help the user to access the resources which are not available in their own library.

• To facilitates the maximum utilization of resources.

• To avoids duplication in resources.

• To make overall improvements of library services.

• To provide better library services with less budget and safe the times of user.

• To develop sharing policies for inter library loan and reciprocal agreements for special collections.

Nowadays the cost of reading materials is increasing day by day, so that libraries are facingdifficulties to acquire collections. The publication duration of print materials take a long timeso that print materials may not relevant enough in compare with soft copy which is availableon the Web. The soft copy can be accessed rapidly on the Web at anywhere and then the use. Information and communication technology has affected operations of various areas inthe library sections which are given below:

a) Library Management: Under this, classification, cataloguing, indexing, database creation,

CAS, & SDI works are affected by the ICT.

b) Library Automation: Under this, organizing databases, automating library, and various house-keeping operations are coming which are affected by the ICT.

c) Library Networking: Under this, resource sharing and information dissemination are coming which have been affected by ICT.

d) Technical Communication: Under this, technical writing, editing, and desktop publishing works are included which are affected by ICT.

Changing Role of LIS Professionals in ICT Environment

The development of ICT and their application in library and information centers has changed the nature of collections; the needs of users; the library environment and the roles of LIS professionals. The old concept of book centered librarianship has changed to the user centered librarianship. ICTs have paved path to new roles for LIS professionals. The LISprofessionals as creators, communicators, leaders, mentors, and lifelong learners aremonitoring the trends in technology continuously to provide global informationinstantaneously to end-users through ICTs. In the Web environment, options of sources andformat of information and flow of information have great impact on the role of libraries andlibrary professionals. In development of collection tools, techniques and approaches hasincreasingly entered in the field of library services globally. It forces to change the way theyare functioning in providing the information needs of their users. These new roles requiredifferent personalities for librarians as well as different skills and knowledge. The focus is onpower to draw together different forms of communication, smoothly integrating them within digital environment and providing access to the stored information using computer systemshas posed various challenges before the LIS professionals in the nature of collections, theinformation environment and the radical change in the expectations and needs of the users. Indigital environment, LIS professional's competence lies in: speeding up access toinformation, speeding up spread of information, filtering material chosen by users, organizinguser information sources in standardized keyword and classification schemes, and developingexpert vocabulary.Researcher havechosen this topic as part of ICT's approach in every field today.Researchers selected this topic to see how each affiliated college libraries function as part of the way that everything is done with the help of computers.A Comperative Study of Impact of ICT on College Libraries Affiliated to S.R.T.M.U.Nanded and Shivaji University, Kolhapur.affiliated college libraries selected for this research.The reason for this is that the libraries of both the universities were selected to see how the old university and the new university library work.

Statement of the Problem:

A COMPARATIVE STUDY OF S.R.T.M. UNIVERSITY AND SHIVAJI UNIVERSITY AFFILIATED COLLEGE LIBRARIES ICT IMPACT

Review of related literature:

Review of related literature is conducted to enable the researcher to get a clear understanding about the specific field of study. It also helps the researcher to have an insight into the tested methods, procedures and interpretations of similar studies conducted elsewhere. Considerable amount of literature is available regarding application of Information Communication Technology (ICT) in libraries, professional development and continuing education needs of library professionals. But studies are relatively few regarding the impact of ICT on professional development and educational needs of library professionals. A survey of the literature found that most of the studies are reported from foreign countries and that such studies are given due importance by the researchers in library and information science. An attempt is made in this chapter to present a survey of the literature available in India and abroad under the subheadings listed below. The studies are further grouped under national, international and arranged in a chronological sequence. The total 85 studies have been reviewed and it is categorized with the following heading according to the nature of the research. 1. General studies on ICT 2. Studies on Library Automation 3.Studies on Digital Library 4.Studies on E-resources 5.Studies on Internet 6.Studies on Networking 7.Studies on web 2.0 8. Studies on web OPAC General Studies on ICT There are 32 studies has been reported in this category and all the studies are focused in general on ICT in nature, the studies are described below one by one.

A survey undertaken between January and March 1998 by **Barlow and Graham,(1999)** investigated the use of information and communication technologies in a sample of 120 industrial and commercial libraries. Ninety-six per cent of the organizations which responded to the questionnaire use computers for some aspect of their library and information services. ICT was used for a range of office and other applications including, in rank order, e-mail, word processing, spreadsheets, presentation packages and database management systems. Ninety-one per cent of the sample used various Internet facilities including e-mail, World Wide Web, file transfer protocol (ftp) and telnet. Describes the results of the survey, reporting on the current state of the art of ICT use and future plans for automation in the sample. In the Information and Communication Technologies scenario service evaluation, standard stabilization and the concurrent development of hardware and software are key elements to design innovative systems. Emulation, fast prototyping and IP re-

use can really help to obtain time-to market solutions. An industrial MPEG/ATM remultiplexing equipment (REMUX) for digital TV applications in the Switched Digital Video Broadcast area for either satellite or cable distribution,

Bollano, (1999) The paper reports the REMUX development cycle highlighting its fast evolution from the prototype based on an embedded system to the System on Chip realization 0.25 μm, ST Microelectronics CMOS technology, mainly focusing on the effective design methodology based on the CSELT Intellectual Property library (VIP) and system emulation. The lack of a vision, policies, programs, subsidies or support from the government or private firms to promote and facilitate the development of ICTs in Peru, it constitutes a good practice example in terms of access to the new technologies. This paper documents the diffusion and use of ICTs in the different socio-economic sectors in Lima, with a special attention to the lower-income groups, using successive quantitative surveys on ICT use in households, cabin as users, and Internet users in Metropolitan Lima, and recent observations and interviews to people working in the field. The results of this study show that the cabin as are effectively improving the daily life of a great part of the residents of Lima, and especially the youth, offering different types of urban services, which have been absent in poor neighbourhoods libraries, post offices, recreation facilities, study places, youth centres, training centres, etc.,

Fernández-Maldonado, (2002) Information and Communication Technologies (ICTs) have become central to education and training in Library and Information Science/Service (LIS) because of the great influence of these technologies on the professional world. This study on Kenya is part of a larger doctoral research project that aims to map and audit the types, nature and diffusion of ICTs in LIS education and training programmers in Africa. The findings indicate that all LIS schools in Kenya have embraced the use of ICTs, but there are major variations in terms of application. All but one LIS School offers a wide range of relevant ICT courses, many of them as core modules. However, not all of them offer, or are able to offer, practical hands-on experience for their students. In teaching and learning, only a few LIS schools use ICTs to deliver lectures, the majority still favouring age-old methods of face-to-face classroom teaching.

Kadriu and Abazi (2006) Recent library and information science literature on university libraries and ICT application in Nigeria is reviewed to expose the state-of-the-art and hence the problems which beset the university libraries in Nigeria as regards ICT application. Identified obstacles militating against effective application of ICT in university libraries to include inadequate funding, inadequate electricity supply, shortage of competent manpower for operation and maintenance of ICT facilities, lukewarm attitude of the Nigerian government

towards the provision of ICT facilities and low level of computer literacy among Nigerians. The ICT system at South East European University is a new private university that has established a sophisticated system of ICT with a clear policy regarding ICT issues. The Computer Center is the main IT Training gathering place at SEEU. It offers basic and advanced IT Skills courses, as well as help desk, certificate programs, staff development. ICT is used also in other segments, such as library and on-line scheduling with aim to improve the quality of different functions and services.

Omona and Jkoja-Odongo(2006) The application of information and communication technologies in health information access and dissemination in Uganda. The project focused not only on information obtainable through libraries for research, teaching, learning and practice, but also on ICT applications concerned with the administration and planning of health services in Uganda. A thematic analysis highlighted the current state of ICT applications, the extent of applications, the roles played and problems faced. Further explores areas where it is used most, cost of accessing information, user profile, ICT literacy, quality of services and telemedicine in the country.

Adekunle (2007) The training and knowledge are the sine qua none of a positive attitude toward ICT. It is essential for libraries to keep up with ICT developments. The fears of some in the developing world toward ICT is widening the digital divide. In African it is time to bridge the digital gap. African libraries who are not yet automated should begin thinking about it now. Training is the first step, which will reduce fears when implementation of ICT begins.

Hughess-Hassell,Sundra and Baldauf,Dana Hanson (2007) The many SHMSS face similar barrier faced by educator in 1990s a lade of resources, time, technical support infrastructure, and professional development, competence with technology continuous to be challenging because professional development remains inadequate. Barrier that are prevent from using technology effectively and to ware with education association, non-profit organization and parent groups to advocate at state and national level to improve. Technology access and increase internet access.

Komalafe and Qnatola (2008) Nigerian teaching hospital. Despite their population size in clinical care, lesser attention hasbeen paid to their library and information needs in medical librarianship literature, compared to extensive research works targeted at satisfying the information needs of physicians andmedical students. This study aimed to determine the reading habits, extent of usage of thelibrary and information resources by the clinical nurses, and their compliance level for ICTapplication in accessing relevant and up-to-date healthcare

information in evidence-based practice. A major finding from the study is that a large number of clinical nurses seldom use the library's printed or/and electronic resources.

Esoswo Francisca (2008) The importance of ICT in making healthy information society. Study reveals that ICT can offerreal opportunities to improve the quality of community life. A healthy information society isconcerned with getting reliable and timely information to its members. Making people awareof the benefits derivable from the use of ICTs will help to make the society a healthy one.

WombohBenkiWomboh and Abba(2008) The universitylibraries of Nigeria do not have adequate ICT facilities. The government should increasefunding to Nigerian University in order to implement the National ICT Policy. Academicstaff of the Universities should be provided with PCS and laptop.

Rahman Ebrahim (2009) The growth of IT and ICT has had a profound influence on highereducation. Student can pursuer scientific educational and research goal using the Internet. LIS has programs have reviewed their curricular in light of the needs of society and the manually can preserve and improve its identity by applying IT and ICT and can educate librarieswho can prove their benefit to the society by being in step with changes and advances intechnology economy, society and culture.

Ayere (2010) The New Partnership for Africa's Development schools was set up as centers ofexcellence in Information and Communication Technology integration, so that other schools could copy their model in e-learning. It was for this reason that they were provided withcomputers, e materials, internet appliances and trained personnel. But to gauge their levels ofsuccess as e learning centers there was need to compare them to other schools offeringInformation and Communication Technology education in Kenya. It was for this reason thatthis study compared the application of the e-learning in New Partnership for Africa'sDevelopment and non- New Partnership for Africa's Development schools in Kenya. Specifically, the study identified significant differences in levels of integration of Information and Communication Technology in curriculum subjects; surveyed the differences in use of e-materials in education research; examined availability of e-libraries; identified significant Differences in academic performance of New Partnership for Africa's Development and noneof the country.

Sampat Kumar and Biradar(2010) found that ICT **c**an be useful took to address problems in medical education, but the lack of Technology and resources is still a serious limitation. The inadequacy of qualified technical staff has stood in the way of users satisfaction. Most users aredeprived of access to the vast medical literature available in electronic format. Absence of cooperation among the medical libraries in Orissa or at the

national level, including the lack ofeven interlibrary loan. The use of information communication technology (ICT) in 31 collegelibraries in Karnataka, India by investigating the ICT infrastructure, current status of libraryautomation, barriers to implementation of library automation and also librarians' attitudestowards the use of ICT. Data-gathering tools used included questionnaire, observation andinformal interview with selected college librarians. Application of ICT in Indian collegelibraries has not reached a very high level. Lack of budget, lack of manpower, lack of skilledstaff and lack of training are the main constraints for not automating library activities. Eventhough library professionals have shown a positive attitude towards the use of ICTapplications and library automation, they need extensive and appropriate training to make useof ICT tools.

Kavitha,Esmail Mohamed Nagarajan (2011) The evaluating and analyzing of use of ICT among the faculty members of health careinstitutions of Pondicherry. The data analyzed the use of ICT tools and electronic health services by the respondents. It is analyzed that ICT tools like multimedia projectors, Internet communication equipment, VCD were very low level usage whereasCD-Rom, Overhead Projector, LCD, Laptop and digital Camera are most preferred ICT tools by the respondents. Towards the performance of library services rendered by the institutions were poor forinformation retrieval.

Sinha, Manoj Kumar (2011) undertaken the study with the view to know the extent of ICT amongst the participants of refreshers course on humanities conducted by Assam University Silchar and other teachers. The participants are mainly drawn from the colleges and universities of NorthEastern Region of India where the penetration of ICT is very slow and teachers are not very much comfortable using computers. University teachers have keen interest and also havingpositive attitude towards learning ICT and applying it for classroom teaching learningprocess. ICT is boon for us if it is used properly for the benefit of the people in particularand for the society in general.

Objective of the Study:

- To study of the background of college libraries affiliated S.R.T.M. University Nanded and Shivaji University, Kolhapur.
- To assessment of services and facilities provided by college libraries.
- To study the use of ICT based resources and services by college libraries.
- To find out the awareness and use of ICT resources by users.
- To identify the barriers and difficulties in adopting ICT in college libraries.
- To know users satisfaction regarding e-resources and services available in library.

- To find out the impact of ICT on college libraries affiliated to S.R.T.M..University Nanded and Shivaji University, Kolhapur.

Research Hypotheses:

- The growth of Information Communication Technology in college libraries is satisfactory.
- The use of ICT among faculty members are increased with high satisfaction level.
- Most of the faculty members suggested improvement the ICT in libraries.
- Mostof the college library a separate building not available.
- All type services and facilities are not provided in the college library.
- Mostof the college libraries appear to have been automated.
- Most of the users awarded of the use of ICT.
- Internet speed and financial difficulties are widely seen when using ICT.
- The effect of ICT is seen in all college libraries.

Research Methodology:

In this research descriptive and analytical method use by researcher area of research is wide **so** descriptive method has been used to undertake the present research work. The researcher had surveyed all libraries to affiliated S.R.T.M.U.Nanded are 101 Aided college and 124 Aided colleges in Shivaji University,Kolhapur.Reasearcher has been selected 50 % as sample randomly.A structured questionnaire is used for collecting from the users of libraries affiliated to both universities.

Importance of the Study:

- This study is carried out at International and National level for betterment of services of higher educational scenario.
- Impact of Information Communication Technology is on each and every sector of higher education and Libraries and information centre is not exception for same. S.R.T.M.University Nanded and Shivaji University, Kolhapur is one of the premier institution not only India but also in as an county scenario.
- This study helps to enhance the services in Libraries towards educational professionals.

International Status:

In fact, it is now difficult to imagine a world without information technology. The provision and use of ICT is part and parcel of the entire system, to both the students, information professionals and the institutions. With the help of ICT to deliver the services of their user is very easy and fast and also it can save the time of user and staff both. Nowadays

ICT has totally changed the concept of library and information centre as it was in early days. Libraries are adopting ICT for performing both housekeeping operations as well as for providing services to the library patrons. Application of ICT has added value to the services and libraries are becoming popular among the patrons. With the aid of ICT libraries are actually marching towards achieving the goal of providing pinpointed exhaustive and expeditious information to those who are in need of that information. Information and communication technology is applied for providing information services which are more convenient, better accessible and cost effective. This research is important at the international level as it helps the researcher to gain important information regarding ICT. So it has International Importance.

National Status:

Today, the useof Information and Communication Technology (ICT) has become a necessity of the time.This research will reveal how ICT is used in various universities in India.This research will be useful to researchers, faculty and students in India. It will help to understand the ICT context of higher education libraries in India.

Scope and Limitations:

Scope:

1.The study is confined to some selected 101 Aided College Library in S,R.T.M.University .Nanded.and 124 Aided College libraries in Shivaji University, Kolhapur. The reasearcher accounted for 50% ofthis,ie. 50 and 62 college are selected,.

2. Scope of the present study is librarians from the colleges having 2(F) and 12 (B) statuses

3.This research will include a library of colleges in all the district of S.R.T.M.University Nanded and Shivaji University, Kolhapur.

4.This research will include all types of aided college libraries.

5.This research will consider the library of the graduate and post-graduate college.

Limitations:

The research has been conducted through some limitations.

1. It is confined to some selected libraries affiliated to S.R.T.M. University, Nanded and Shivaji University, Kolhapur.
2. This research will not consider the libraries of a Non-Aided College.
3. This research will be limited to the libraries affiliated to S.R.T.M. University ,Nanded and Shivaji University,Kolhapur.
4. University libraries will not be included in this research.

Tentative Chapters Scheme:

Chapter One **:**Introduction

Chapter Two **:** Review of Related Literature

Chapter Three **:**Description of Information, Communication & Technology

Chapter Four **:** Data Collection Analysis and Interpretation

Chapter Five **:**Findings, Suggestions and Conclusion.

Appendix -

Bibliography

Proposed Work Plan:

Sr.No.	Nature of Work	Proposed Period
1.	Collection of Relevant Literature of the Study	6 Months
2.	VisitingCollegeLibraries affiliated to S.R.T.M.University and Shivaji University, Kolhapur and Preparation of Questionnaire.	6 Months
3.	Data Collection & Interviews	6 Months
4.	Analysis Interpretation of collection Data	6 Months
5.	Writing of Thesis	6 Months
6.	Submission	6 Months

References:

1.Buckland, Michael K. (1986). Education for librarianship in the next country.Library trends, 34(4): 777-787.

2. Gupta, Dinesh Kumar and Jain, S.L. (1996). Managing changes in libraries.ILA Bulletin, 32(1-2):139-147.

3. Kaliammal, A. &Thamaraiselvi, G. (2005). Role of ICTs in Library and Information Science. Delhi: Author Press.

4. Kaula, P.N. (1988). Need for new dimensions to library and information science education inIndia. Indian Journal of Information, Library and Society.1(1-2): 58-68.

5.Konnur, P. V. (Ed.) et.al. (2008). Model ICT Practices in Librarianship. Bangalore: Indian Academic Library Association.

6. Kumar, P. S. G. (2004). Information Technology: Applications. Delhi: B.R. Publishing Corporation.

7. Mahapatra, M. & Ramesh, D. B. (Ed.). (2004). Information Technology Applications in Libraries: A Textbook for Beginners. Orissa: Reproprint.

8. Mondal, A. K., &Bandyopadhyay, A. K. (2010). Application of ICT by Related Manpower Problems in the College Libraries of Burdwan. Retrieved from http://publications.drdo.gov.in/ojs/index.php/djlit/article/view/459/255.

9. Murugesan, N., &Balasubramani, R. (2011). Application of ICT Based Resources and Services in Research and Development Libraries in Tamilnadu. European Journal of Social Sciences, 23(1), 157-164.

10.Panigrahi, R. M. (2000). Impact of Information Technology on Libraries. New Delhi: EssEss Publication..

11.Roy, Sumit. (2005). Globalization, ICT and Developing Nations. New Delhi: Sage

Rajshekharan, K., Nair, R. Raman, &Nafala, K. M. (2010).Digital Library Basics. New Delhi: EssEss Publication.

12.Sampath Kumar, B. T. &Biradar, B. S. (2010). Use of ICT in College Libraries in Karnataka, India: A Survey Program. Retrieved from http://jcccugcinfonet. in/Search/dbresults3.asp

13. Sarangthem, B., Baita Devi, K. H., & Singh, Ch. Ibohal. (2011). Developing ICT Skills by Social Scientists to Survive in Digital Information Environment: An Assessment.IASLIC Bulletin, 56(1), 18-22.

14. Satyanarayana, B. et al. (Eds.). (1998). Information Technology: Issues and Trends. India: Cosmo Publications.

15. Sehgal, R. L., &Behl, D. K. (1996). Manual on Computer Applications Training in. Library Science. New Delhi: EssEss Publication.

16. Singh, G. (2007). Introduction to Compress for Library Professionals. New Delhi: EssEss Publication.

17. Thapa, N. (2007). Slices of Library Automation. Agra: Y. K. Publishers.

18. Tiwari, B. K., &Sahoo, K. C. (2011). Infrastructure use of ICT in University Libraries of Madhya Pradesh: Libraries Views. International Journal of Information

Dissemination and Technology, 1(4), 232-240.
19. Venkatesh, S. (2003). Information and Communication Technologies (ICTs) Impacts and Impediments. Delhi: Authorspress.
20. Verma, K. (2008). Computer technologies in libraries. In: Computer Application to Library. Delhi: Vista International Publishing House. pp. 1-46

Webliography:

www.nlist.inflibnet.ac.in

www.jcccugcinfonet.in

www.shodhganga.inflibnet.ac.in.

www.research.View pub

www.ugc.com

www.ijlit.in

www.publications.drdo.gov.in/ojs/index.php/djlit/article/view/459/255.

www.jcccugcinfonet. in/Search/dbresults3.asp

Researcher
Mahadev Nagnath Chavan
(Librarian)
Baburao Patil College of Arts & Science
Angar, Tal-MoholDist-Solapur

Research Supervisor
Dr.VikramV.Giri
(Librarian)
ShahidBhagatsinghMahavidyalaya,
KillariDist-Latur

Place: Nanded.

Date:10 / 12 /2019